Improving Bug Tracking Systems



Thomas Zimmermann Microsoft Research



Rahul Premraj Saarland University

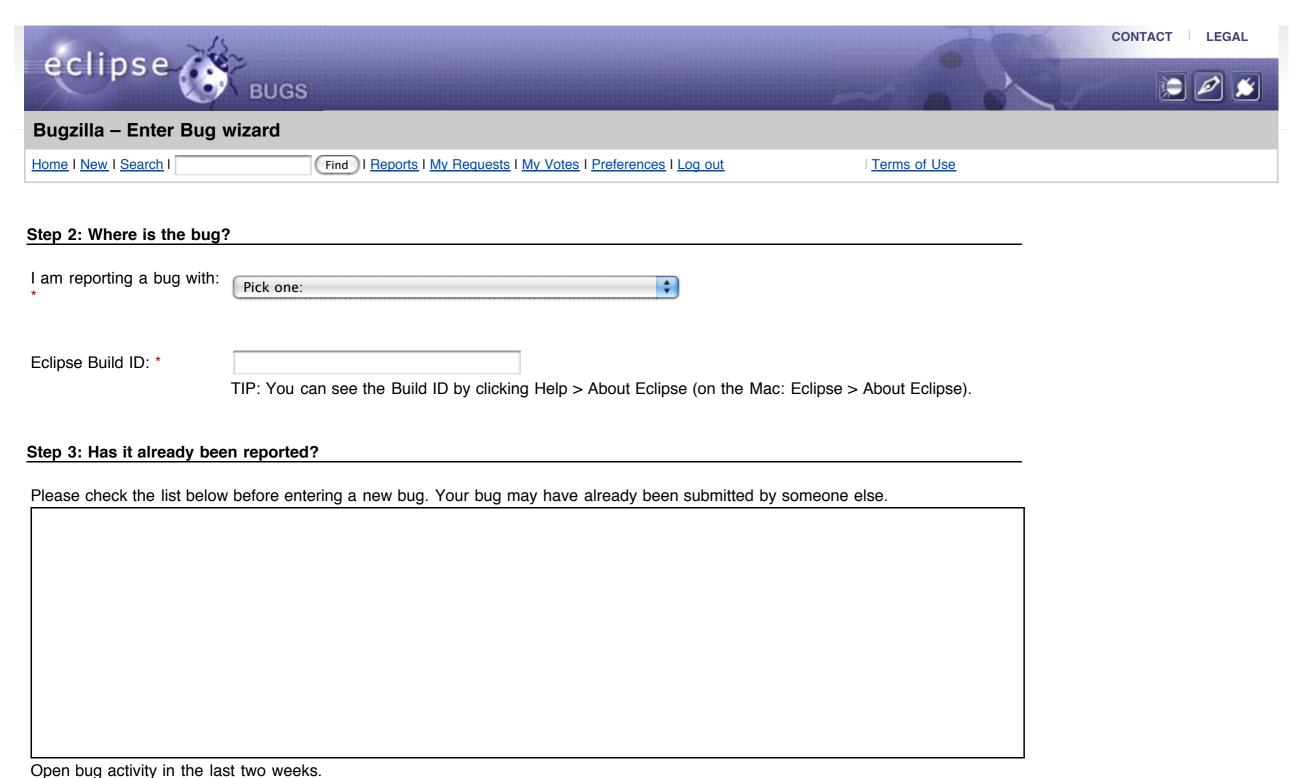


Jonathan Sillito
University of Calgary

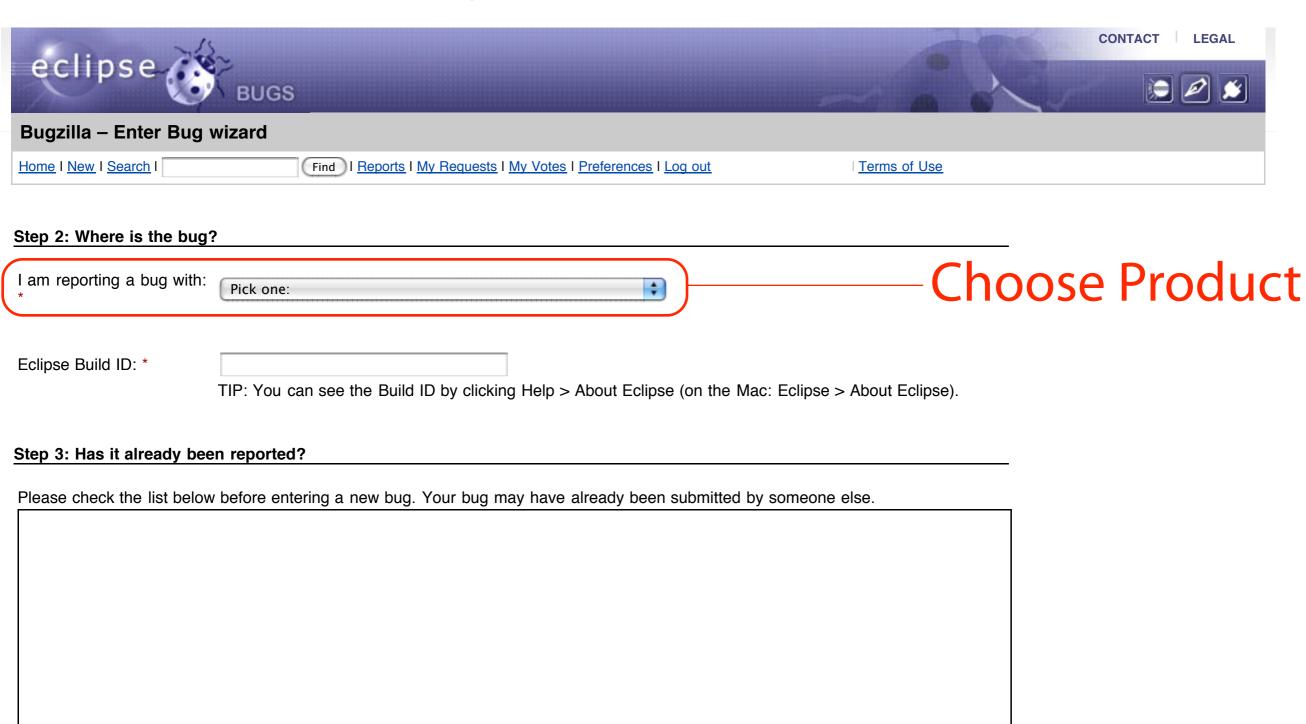


Silvia Breu Cambridge University

Bugzilla Form



Bugzilla Form



Open bug activity in the last two weeks.

Bugzilla Form

Step 4: Information	
Summary: * Steps to reprodu	ce: * 1. 2. 3.
More information	TIP: If you can't reproduce the steps or correctly explain them, your bug will likely be closed as an invalid bug. — More info.
	TIP: Write any information you can provide that will help identify the problem.
* denotes require	ed field.
You're almost do	one!
Continue to the	final step.
Actions:	Home I New I Search I Find I Reports I My Requests I My Votes I Preferences I Log out r.premraj@gmail.com
Saved Searches	I <u>Terms of Use</u> :My <u>Bugs</u> Add the named tag to bugs Commit

Mozilla Bug #61287



Bug reported

Mozilla Bug #61287





Bug reported

Comment #16

if someone could provide a stack trace, that would be a huge help.

Mozilla Bug #61287







Bug reported

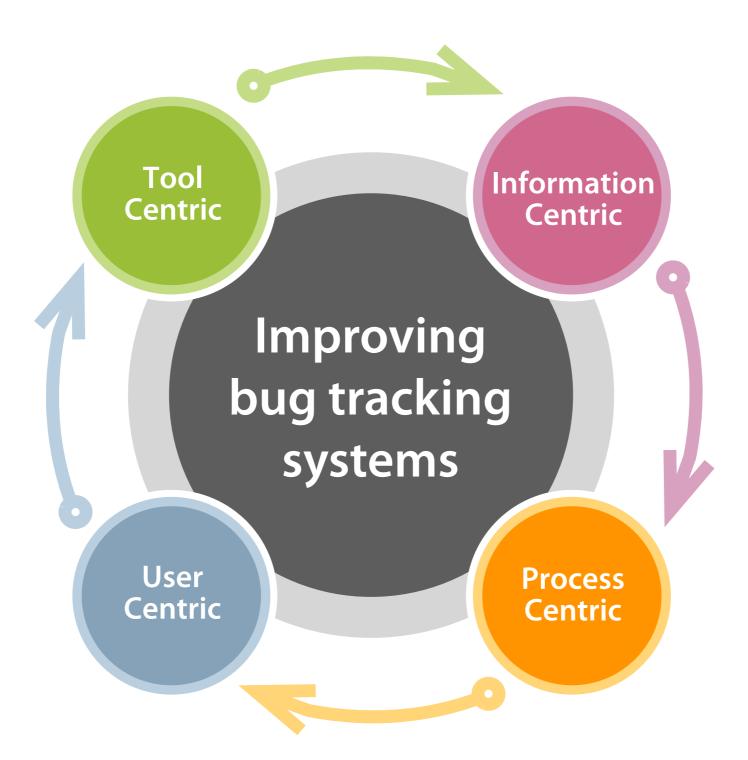
Comment #16

if someone could provide a stack trace, that would be a huge help.

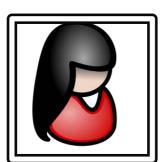
Comment #26

Fix verified.

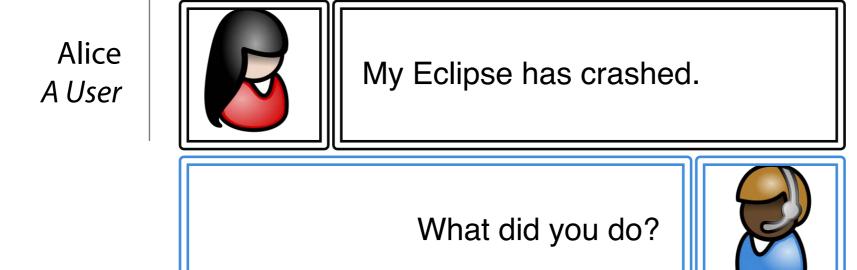
Generation Next



Alice A User

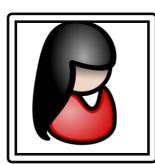


My Eclipse has crashed.



Bob A bug tracking system



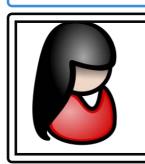


My Eclipse has crashed.

What did you do?



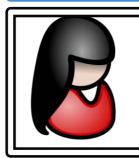
Bob A bug tracking system



I clicked on File → New and OK

What did you do?





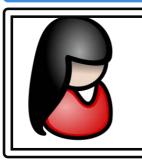
I clicked on File → New and OK

Did you choose a Java project?



What did you do?

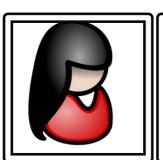




I clicked on File → New and OK

Did you choose a Java project?

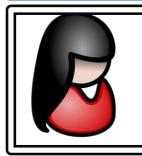




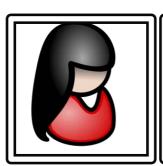
I clicked on File → New and OK

Did you choose a Java project?





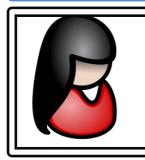
No.



I clicked on File → New and OK

Did you choose a Java project?

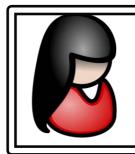




No.

Did you choose a Java project?



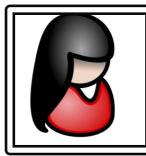


No.

A few more messages later...

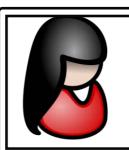
Did you choose a Java project?





No.

A few more messages later...



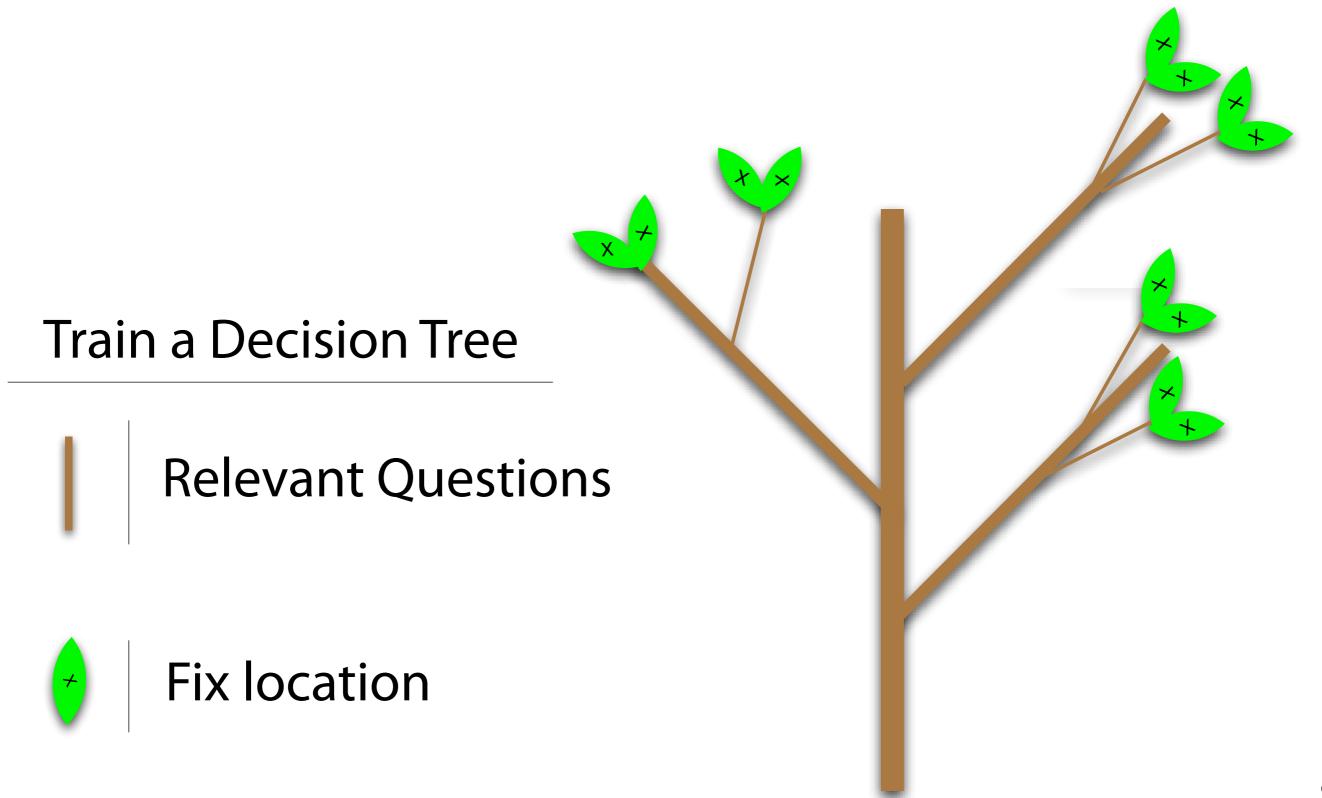
No.

A few more messages later...

Thanks Alice. The bug is most likely in ProjectCreator.java. We will fix it soon.



First steps...



A First Experiment



20 most frequently fixed files in ECLIPSE JDK

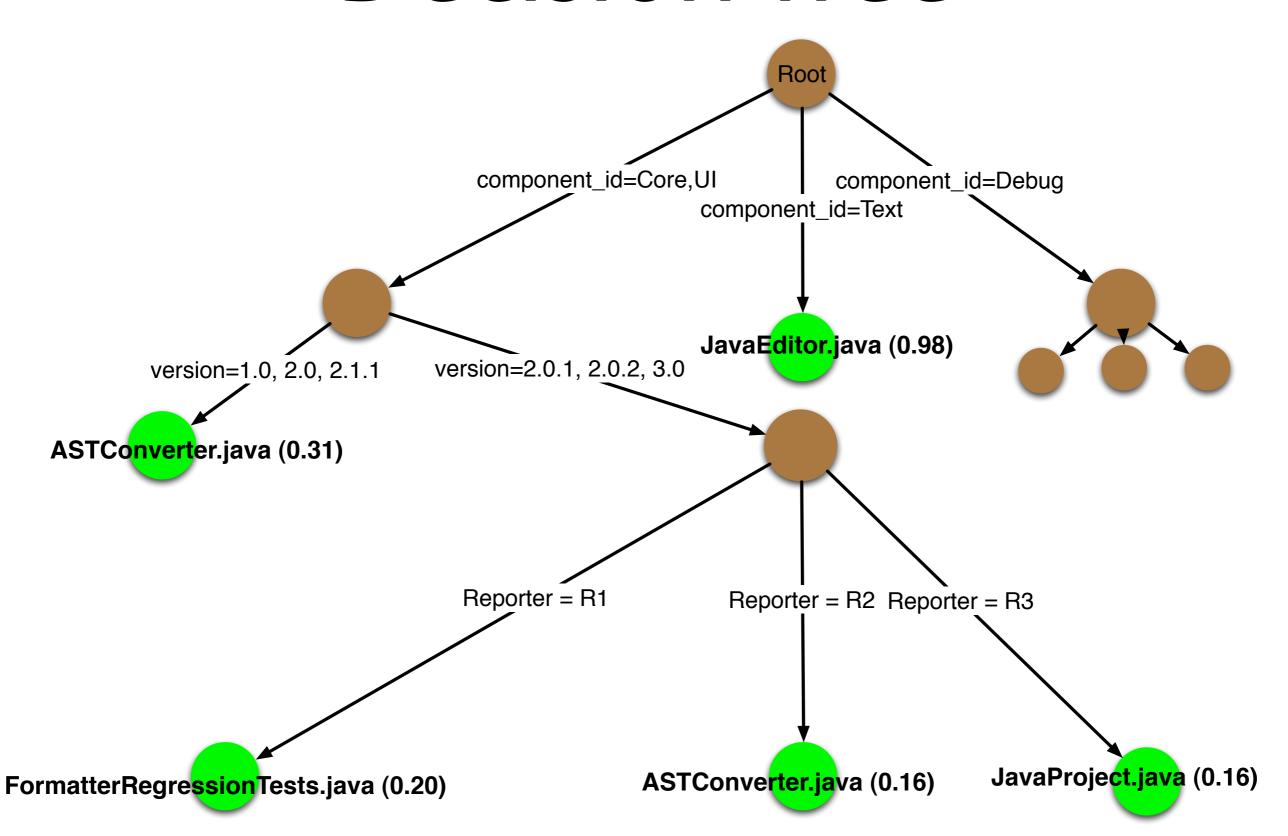


2,875 related bug reports

Questions as Inputs

- How severe is the bug? (bug_severity)
- On which OS does it occur? (op_sys)
- Which is the affected component?
 (component_id)
- Which version of Eclipse is affected? (version)
- What is your name? (*reporter*)

Decision Tree



Next Steps

- Build catalog of important questions (information) from a large sample of bug reports.
- Build a prediction model using the data.
- Evaluate model on a different set of bug reports.